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LYMPHOMATA

IN THE ANTERIOR MEDIASTINUM, SIMULATING AORTIC ANEURISM,

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THE LONG ISLAND COLLEGE HOSPITAL.



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LYMPHOMATA IN THE ANTERIOR MEDIASTINUM, SIMULATING AORTIC ANEURISM.¹

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IN no region of the body do slight modifications in the location of morbid processes produce greater variations and confusion of symptoms than in the thoracic cavity. Some of its problems are, therefore, among the most complex, and severely test the resources of clinical experience. Every so involved case presents some peculiarity of its own which forms an exception to the best classification, so that there is no class of morbid processes which so urgently demand investigation from the broadest standpoints of pathology.

The difficulties encountered in arriving at an accurate differential diagnosis in cases of aortic aneurism, particularly during their early stages, and more especially when they take their origin close to the heart itself and along its ascending arch, are fully appreciated, even by those who can call into requisition the best diagnostic facilities aided by the widest experience. Such a diagnosis is largely inductive and inferential, being based upon the disturbances of function which arise as vital parts are encroached upon. When the progress of such a disease is slow, and the environing parts have ample opportunity to adjust themselves to its encroachments, the diagnostic symptoms evoked are correspondingly less sud-

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den, less pronounced, less arrestive of attention or available for interpretation.

Vastly more complicated become such problems when morbid growths of any description are bound down and confined below the deep cervical fascia, as they are apt to be when situated in the anterior or posterior mediastinum. It matters little in result whether these fall under the class of "benign" or "malignant," since all are hetero-topic when parts essential to life become involved. But those characteristically malignant in their rapid growth and extension help us somewhat to realize the more pathognomonic symptoms thus induced; but these advantages are unavailable when the neoplasms are of the simpler, and so far, benign character.

As to final results, whether we have to deal with aneurismal or morbid growths so situated, therapeutic art, at present, is little influenced by any diagnosis, however accurate. But there are so many collateral considerations often involved, which make it very desirable to estimate the probabilities awaiting any given case, that we can never accumulate too much experience upon which to fall back; and it is about the less clear or pronounced cases—those in which the prominent symptoms are undecisive and even misleading—that we are most apt to be baffled in arriving at definite conclusions. This would be ample justification, apart from the scientific interests involved, for giving publicity to the following case, in which subjective *pain* was the only prominent and engrossing symptom from the time when it first came under observation and treatment up to that period when the added evidence of an obstructed circulation indicated a stage in the progress of some profound and serious disease, without enabling the observers to connect that pain *directly* with it.

To avoid prolixity minute details must be suppressed. All

the essential facts set forth are given in the order they presented themselves to the observer, and not in the sequence of their actual development, for they were not so available. The sequel of this, as of many other cases, illustrates the relative values of prospection and retrospection in clearing up the mysteries involved; but even with all the latter advantages it is not every problem thus presented in practice that eventually finds a solution so entirely satisfactory.

It is the case of a married gentleman, 48 years of age, well proportioned as to height and weight, without constitutional taint, either hereditary or acquired, and of unusually regular habits sustained through an active life under favorable circumstances.

At the age of 16 years he exchanged his residence among the mountains of New Hampshire for more extended business operations in the valley of the Mississippi and over the prairie regions of the West; the latter part of his life was confined to one of the river towns in the State of Illinois. His robust health, which always exhibited strong resisting power to disturbing agencies in general, did not, however, escape those specific malarious influences to which all western immigrants are exposed, and from which all more or less suffer. He repeatedly encountered such acute attacks, and made liberal use of the usual remedies to ward off or alleviate their effects. Living amid such experience, it was but natural to look upon any and every accession of acute disease as largely modified by, if not originating from, this pervading source.

Whilst enjoying his ordinary good health in the month of July, 1880—which had been an unusually hot season—and whilst earnestly engaged in active business, he was in the act of changing his coat one day, preparatory to returning home to dinner, when he was suddenly seized with a dull, depressing, aching pain in his right shoulder, which became

more aggravated by the motion of walking, and continued until his arrival at home, when it partially subsided, but did not entirely pass off. It returned again in varying paroxysms of intensity, but never assuming a distinct intermittent character, and gradually became agonizing and constant; in fact, he was never subsequently free from it, except when under the influence of anodynes. The pain extended to the muscles of the right side of the neck, which gradually became permanently contracted, stoutly resisting any attempt to push the head towards the opposite side, but responding to the electric current, both, however, giving intense suffering. He was unable to elevate the right arm from the body without inducing more pain, whilst all bodily motion, exercise, jolting, pressure and applications of hot or cold substances alike aggravated it. Rest in bed was only attained whilst lying upon his back and fixing the right shoulder by supporting pillows.

The treatment applied at this stage of his malady and whilst at home was very indefinite and varied, with the malarial, neuralgic, rheumatic or inflammatory conception alternately entertained about it; but very partial relief, and that transient, was obtained. A large blister over the deltoid, and anodynes, seemed most effective.

He came to New York on the 12th of September following, and was very thoroughly, rigidly and repeatedly examined by an eminent neurological specialist. Nothing but the pain as described, and its obvious effects, were manifest. No evidence of any lesion of structure or function, beyond those already indicated, in neck or chest, could be elicited to account for this pain. There was no recollection of any blow, strain, injury or accident; nor could any special attack of disease, beyond the fevers attributed to malarial origin, be remembered then, or at any subsequent period during his life, notwithstanding the rigid inquiries, repeated under every

condition, likely to develop some adequate cause for this persisting and overwhelming pain. It was therefore christened "cervico-brachialgia;" attributed to malarial influence, and submitted to energetic and varied specific treatment, but without appreciable advantage. Hypodermic anodyne injections alone succeeded in ameliorating his suffering.

The patient passed under my care about the 1st of October following. After repeatedly traversing the whole history, and instituting the most searching investigations by myself, he underwent a series of most critical and prolonged examinations in consultation. Auscultation and percussion, assiduously employed by specialists of well-merited repute, discerned no lesion of heart or lungs. Surgeons of equal eminence could detect no trace of tumor or active disease. There was no perceptible gland enlargement, no bulging of the deep cervical fascia, and no displacement of organs.

The result of this united work was only to develop the most indefinite suspicion that possibly some more profound, serious, but undiscoverable lesion lay behind this persisting pain; but even that suspicion received no hearty concurrence until the close of October, when we had the first indications of a slight œdema about the neck which made its appearance before rising in the morning. Very gradually this extended to the face and down the right arm, and suddenly there was an acute attack, rheumatic in character, implicating the left shoulder, arm and forearm, attended with great muscular soreness on motion, swelling and œdema to the fingers, all of which subsided in a few days, with copious lateritious deposit in the urine. Still later, the areolar tissue over the right shoulder, neck and pectoral region became brawny and hard. The veins and venules of the whole chest, anterior and posterior, became swollen and blue, first in patches, then in continuous lines, but these phenom-

ena would, on first making their appearance, fluctuate in location, intensity and duration; ultimately, however, they became permanent. Coincident with these external changes commencing, hydro thorax was detected on the right side, rising gradually up to the scapula, compressing the right lung and pushing the apex of the heart to the left. The respiration became markedly embarrassed, particularly on assuming a recumbent posture, so that there was a growing indisposition to lie down, a preference for more elevation of the upper extremities. The right radial pulse early became more feeble than the left. He also felt annoyed at his inability to swallow drink as freely as formerly, but this did not increase, and no inordinate thirst was ever exhibited. At no period whilst under my observation was there any approach to pyrexia, not even during the rheumatic attack, although the pulse was always abnormally frequent, and attributed to his uncommon nervous susceptibility, which was an inherited trait. Throughout all, the emunctories performed their functions well, or were readily influenced by mild measures. The urine repeatedly examined yielded no positive evidence beyond variations in the normal elements. His appetite was all along fair, but not fastidious nor inordinate; food was digested and assimilated, and scarcely any emaciation took place.

That branches of the sympathetic nerve were early involved is now evident, for he remarked to me that before coming away from home he had noticed that the right side of his neck, face and ear sometimes seemed warmer, fuller and more red than the other side; but whilst under my care this was replaced by occasional profuse perspiration on the left side, whilst the right was quite free. He was ordinarily "a great sweater," and towards morning these sweats were very annoying, though never colliquative, and rather seemed to be salutary.

Two days previous to death the feet and ankles became

slightly œdematous. The right arm had become ponderous to excess and the pain intolerable. The sensibility of the hand and fingers remained unimpaired as measured by dividers, and the muscles of arm and forearm could grasp an object firmly, although the deltoid and those immediately around the shoulder had become exceedingly atrophied, having lost all power of motion. On the night of December 16th, he seemed more than usually distressed for breath, and fell into an unquiet sleep after his usual hypodermic, from which he aroused about 3 A. M. and spoke with his night nurse. Half an hour later he quietly ceased breathing, and died without rale or struggle.

On post mortem examination the right side of the thorax was found filled with clear serum; lung free from adhesion but compressed upward. Left lung emphysematous and firmly glued to the entire chest wall and diaphragm from ancient pleuritis. A firm mass presented in the anterior mediastinum, at the root of the great vessels, and entirely beneath the deep fascia, extending to the right, outward and backward, firmly embracing the whole brachial plexus of nerves nearly up to their origin, and downward into the axilla. In this mass were embedded the vena cava descendens, the right anonyma and subclavian veins, the latter firmly closed by a dense thrombus; also the right subclavian artery, par vagum, and the right bronchus greatly reduced in calibre. The mass impinged upon the right auricle. Sections made through this mass plainly revealed a chain of lymphatic glands with their vessels thickly capsulated and sheathed by dense fibrous tissue, calcified in spots where it invested the brachial plexus. Some of the mediastinal glands were in process of softening through compression of their nutrient blood vessels. The pericardium contained little fluid; heart and valves normal, whilst firm clots filled the right auricle and extended down into the

right ventricle ; probably being the immediate cause of death. Left side healthy and empty.

REMARKS.

Taking the history of aneurism of the ascending aorta (most frequent form) as portrayed by such reliable authority as Neimeyer, we find no symptom wanting in this case to invalidate the presumption of such a disease, and yet, there were no indications to differentiate accurately such a disease from the post mortem revelations, if we may except the early, severe and persisting pain localized from the first in the shoulder. It was certainly more *accentuated* than in any case of aneurism coming within my own experience, and in perfect accord with the almost unique developments of the autopsy. Since the death of this patient I have casually received some additional information from which it appears that many years ago he was ill in the city of St. Louis with what was then designated simply "fever," but which I am now led to believe was the extensive pleuritis, which left its permanent effects upon the left side of the chest, and started the nutritive irritation and consequent hyperplasia of the bronchial glands. Some years later I find that he contracted whooping cough, which is said to have been "severe and protracted," leaving him subject to an irritative cough which remained behind, but attended with very little mucous expectoration, and never exciting the least anxiety. This cough, with more secretion, was prominent and sometimes troublesome during the last month of his life. His friends now call to mind that ever since the whooping cough his respiration was apt to become disturbed and louder when hurried by exercise. He often seemed more guarded and circumspect, and less inclined to indulge in the energetic physical exploits of former years.

This addition to our history enables us to clearly trace

the changes wrought in the lymphatic glands and their investments to the antecedent pleurisy, reinforced by the whooping cough. The extension of the morbid processes to the right instead of the left side, was in the direction of least resistance.

Histologically considered, we have no special complications of a specific or malignant character. The morphological changes in both lymphatic glands and investing connective tissue are no less simple, and admit of clear interpretation, conveying definite and comprehensive meaning, provided they are not obscured by arbitrary technical verbiage.

Dr. Bates, who performed the post mortem examination, has been very successful in making some exquisitely fine microscopic sections of the parts removed. The cells of the static connective-tissue stroma investing the lymphatic glands and nerve bundles, show abundant proliferations which have been transformed into the firm fibrous tissue so characteristic of all cicatricial processes. The contracting tendency of such tissue, with its consequent compressing influence upon the imbedded nerves, is beautifully displayed upon the softer contents of the nerve fibres themselves. In some of these sections the true conducting nerve substance is totally absorbed, leaving only an alveolus of fibrous tissue lined with shreds of neurilemma. Other alveoli are seen still filled with fatty debris in various stages of degeneration. We have one very satisfactory longitudinal section of this nerve structure in which the neurilemma and the investing substance of Schwann are seen to encircle the axis cylinder reduced to a delicate line of glittering fat globules. The lymphatic gland cells accompanying the nerve bundles do not exhibit any evidence of excessive hyperplasia, but rather that mild form of hypertrophy which precedes and falls short of proliferating. Some of the lymphatic glands in the mediastinum, and nearest the immediate source of irri-

tation, exhibit proportional indications of its effects. Here we have not only moderate proliferation of the gland cells, but these already upon the retrograde process of softening, and in spots almost diffuent.

To overlie and confuse a state of things so patent, with names and terms so indefinite as "*sarcoma*" and "*sarcomatous*," is unnecessarily to obscure the truth and display more regard for the meaningless verbiage of a waning authority than for the exactitude and simplicity of statement demanded by modern pathological science. Whilst preserving all becoming respect for the work of our predecessors, we must not forget that insight, like sight, suffers its inevitable decline, and is prone to cleave with greater tenacity to its prejudice and prepossessions as the power of penetration slips from its grasp.

Finally, the large amount of clear serum found in the right pleural cavity is not among the least points of interest. It was of relatively recent origin, and coincident with the increased pressure upon the right bronchus and venous circulation, the former being greatly reduced in calibre, admitted a minimum of air just at the time it was most wanted to distend the lung and counteract the increased pressure exerted upon the venous walls by the banked-up blood current. This loss of balance could only be restored by an effusion of serum into the pleural cavity, and it is worthy of notice that the level of this fluid once attained was very little altered in amount, notwithstanding the liberal and effective employment of active diuretics. Thus the effusion had a steadying, supporting effect upon the thoracic contents, and was eminently conservative, being the best that nature could achieve under all the circumstances.

In this view of the facts it would have been a misinterpretation of nature and misapplication of art to have attempted its removal by operation. Fatal syncope would most likely

have been the immediate consequence, unless the fluid removed had been as rapidly replaced. It is evident that a full application of all the facts in a case are necessary to carry out what Chomel called the first law of pathology—viz.: "*To do no harm.*"

In no case was the inestimable value of hypodermic injections of morphine more manifest, not only in ameliorating pain, but in prolonging life, made tolerable by their use. When completely absorbed by intensest agony it never failed to transport him into comparative comfort within twenty minutes. No employment of other anodynes, nor of morphine itself, by the stomach or rectum (though often tried) ever afforded the relief obtained from hypodermics. Any attempt to discontinue their use was followed by such augmentation of distress, rapid exhaustion of strength, cold sweats, drawn countenance, depressed pulse, loss of temperature (97° – 96° Fahr.) that impending death seemed inevitable. It was necessary, however, to carefully grade the dose to avoid undue depression of the great nerve centres. If narcosis was too profound or prolonged, corresponding depression followed with oppressive accumulations of bronchial secretions. It was remarkable what comparatively small quantities of the drug sufficed to attain the desired effects—on the average rarely more than from 1 to 3 grs. distributed through twenty-four hours. The pure muriate, dissolved in water alone, was employed, and no abscess ever occurred.

The combination with atropine, even in the slightest proportions, produced such distressing feelings about the throat that its use was discontinued, and if the antagonism recognized as existing between the two drugs is correct (and I believe that it is), the practice seems to have no scientific basis for its support when we desire to obtain quickly the maximum effect from the minimum dose.

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